

REMARKS

The drawings have been amended, as suggested by the Examiner. A marked up copy of the drawings are included.

Claim 7 has been amended to correct the claim dependency.

The Examiner rejected claims 2-37 under 35 U.S.C. Section 103(a) as being unpatentable over Garretson et al., EP Patent Number 0230,348 in view of Anderson, U.S. Patent Number 3,839,672.

Garretson et al. disclose a membrane based probing device 10 that includes a printed circuit board 3 (see Figures 1 and 2), a membrane 1, and a clamp 7 that includes a window 11 and a spring 9 pressing against the membrane 1. The membrane 1 includes contacts 17 electrically connected to traces 15 supported by the membrane 1 (see Figure 3). Each contact 17 is electrically connected to a single respective trace 15. The traces 15 on the membrane 1 are electrically connected to their respective circuit board connectors 29 in the printed circuit board 3. The connectors 29, which are supported by the circuit board, are electrically connected to the respective external contact pad 13 (see Figure 2).

As illustrated in Figure 6B, the connection between the trace 15 and the respective connector 29 is by a hole 31 in the polyimide layer 21 filled with conducting material. As it may be observed the electrical signal path includes a contact 17, to a trace 15, to a connector 29 through a hole 31, and to a contact pad 13. It is noted that the grounded conducting strips identified by the Examiner is a ground plane 19 supported by the membrane 1 (see Figure 3). A ground plane has a constant potential, such as zero volts, that is independent of the potential within the signal paths to the contacts 17.

Claim 2 has been amended to more clearly patentably distinguish over Garretson et al. by claiming that the second, third, fourth elongate conductors and interconnecting conductor are all supported by the second support. Also, when the first and second supports are engaged, at least one of the first conductors is electrically interconnected to the second elongate conductor. Further, the interconnecting conductor electrically interconnects the third and fourth conductors at a location beyond the first end of the second elongate conductor.

Garretson et al. simply disclose straight signal paths from the contact 17 to the contact pad 13, and accordingly fail to disclose that any of the connectors 29 are electrically connected together. Moreover, electrically interconnecting any of the connectors 29 together would result in two contacts 17 having effectively the same signal path, thus rendering effective probing unlikely. Further, Garretson et al. simply fail to suggest any need to provide an interconnecting conductor between a pair of elongate conductors, nor any additional elongate conductors available that would be able to facilitate such an interconnection.

Claims 3-7 depend from claim 2, either directly or indirectly, and are patentable for the same reasons as asserted for claim 2.

Claim 8 has been amended to more clearly patentably distinguish over Garretson et al. by claiming that the second, third, fourth elongate conductors are all supported by the second support. Also, when the first and second supports are engaged at least one of the first conductors is electrically interconnected to the second elongate conductor. Further, the first surface area of the fourth elongate conductor is greater than the second surface area of the third elongate conductor in a region proximate the first end of the second elongate conductor.

Garretson et al. simply disclose straight signal paths from the contact 17 to the contact pad 13, and accordingly fail to disclose that any additional unused connectors 29 nor any additional electrical conductors that could be used. Also, Garretson et al. simply disclose a uniform pattern of structures around the printed circuit board 3. Garretson et al. simply fail to suggest any difference in the surface areas of the third and fourth elongate conductors in a region proximate the first end of the second elongate conductor.

Claims 9-14 depend from claim 8, either directly or indirectly, and are patentable for the same reasons as asserted for claim 8.

Claim 15 has been amended to more clearly patentably distinguish over Garretson et al. by claiming that the second and third elongate conductors, and first interconnecting conductor are all supported by the membrane. Further, the interconnecting conductor electrically interconnects the second and third conductors at a location beyond the first end of the first elongate conductor.

Garretson et al. simply disclose straight signal paths from the contact 17 to the contact pad 13, and accordingly fail to disclose that any additional interconnection structures. Garretson et al. does disclose a ground plane 19 but fails to disclose its electrical interconnection at a location beyond the first end of the first elongate conductor. Further, Garretson et al. simply fail to suggest any need to provide an interconnecting conductor between a pair of elongate conductors.

Claims 16- 25 depend from claim 15, either directly or indirectly, and are patentable for the same reasons as asserted for claim 15.

Claim 26 patentably distinguishes over Garretson et al. for reasons similar to those previously discussed.

Claims 27-37 depend from claim 26, either directly or indirectly, and are patentable for the same reasons asserted for claim 26.

Respectfully submitted,

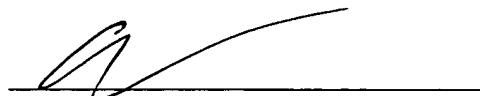


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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on May 11, 2004.

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